The manufacture of such compressible or slightly spongy forms of silicone is known in the art, for example by introducing foams or bubbles into a silicone polymer during its formation. Thus, the medial conductive portion **240B** can be compressed and constrained in channel **270a** in the introducer as depicted in FIG. 11A. FIG. 11B depicts the slidable deployment of member **220A** wherein its radial expansion is indicated by arrows **A**. In some embodiments, the deployment of the member **220A** and expansion of medial conductive portion **240B** may only expand the diameter of the member by a small percentage. However, in small cross-section members **220** that are percutaneously introduced, any increase in the surface area of the engagement plane **225** and surface conductive layer **240A** can be very important. In the application of Rf energy to tissue, the effective area of the electrode surface is critical for energy delivery.

FIGS. 12 and 13 illustrate other embodiments of energy delivery members **280** and **290** that have a medial conductive portion **240B** that is compressed to provide other advantages. These embodiments, in general, again have a core portion **240C** that is coupled an Rf source **150A** and further define a surface engagement plane **240A** as described above for contacting the targeted tissue **tt**. As described above, the inventive energy delivery member can be used for any thermally-mediated therapy for any thermal dose and in some cases it may be desirable to apply energy about a surface of a substantially firm organ or anatomic structure **292**. In such a case, as illustrated in FIG. 12, it would then be desirable to provide an engagement plane **225** conforms to the surface contours of the anatomic structure **292** that is engaged to thereby provide more effective energy delivery. In FIG. 12, the portion of the energy delivery member shown has an insulator layer **294** about three sides of the member to provide an engagement plane **225** extending along one side of the member. FIG. 13 illustrates another embodiment of energy delivery member **290** that can benefit from a compressible or resilient engagement plane **225**. In this embodiment, the engagement plane **225** can again form one surface of a member and cooperates with a clamping member **295** that clamps the targeted tissue **tt** against the plane **225**. In other words, the engagement plane can be carried by either or both elements of a jaw structure. In operation, the resiliency of the medial conductive portion **240B** can optimally maintain the engagement plane **225** in suitable engagement with the surface of the targeted tissue as the characteristics of the tissue are changed, for example by dehydration, wherein the engagement plane will expand as the tissue shrinks (see arrows in FIG. 13). When applying a

thermally-mediated therapy for purposes of coagulation or sealing, the tissue can be expected to dehydrate and shrink to some extent.

In another embodiment, the variably resistive matrix can be a pressure-sensitive resistive material that is carried in an exterior layer or body portion at an exterior of a probe working end. For example, the variably resistive layer can be substantially thin and fabricated of a material called a "pressure variable resistor ink" identified as Product No. CMI 118-44 available from Creative Materials Inc., 141 Middlesex Rd., Tyngsboro, MA 01879. The resistance vs. pressure characteristics of the variably resistive matrix can be adjusted by blending with Product No. CMI 117-34 that is available from the same source. It can be appreciated that the working end of the probe can function somewhat as depicted in FIGS. 12 and 13 wherein increasing pressure against the pressure-sensitive resistive layer can decrease its resistance to enhance Rf application to tissue through the layer. Conversely, the pressure-sensitive resistive layer can be of a type that increases in resistance as pressure is applied thereto. Such a pressure-sensitive resistive material further can be an open cell of a closed cell sponge-type material. In another embodiment, the system can provide a fluid source coupled to the open cell variably resistive material to provide fluid flows thereto as will be described further below.

4. <u>Type "C" probe for tumor ablation</u>. Type "C" probes corresponding to the invention are illustrated in FIGS. 14, 15A & 15B that are adapted for energy delivery to tissue, again described in the treatment of a targeted benign or malignant tumor. FIG. 14 illustrates a Type "C" probe **300** in a sectional view of its working end only that can apply energy to tissue in a manner similar to the Types "A" and "B" embodiments described above. Each energy delivery member **320A-320B** defines a surface engagement layer portion **340A**, a medial conductive portion **340B** of a PTC material and a core conductive portion **340C**. In the previously described embodiment of FIG. 8, the multiple energy delivery members **220A-220B** operated simultaneously in the same polarity with respect to Rf source **150A** and the electrical return. In contrast, the probe **300** of FIG. 14 has two energy delivery members **320A-320B** that superficially appear to be identical to the probe of FIG. 8. However, the probe **300** of FIG. 14 operates in a bi-polar fashion so that an Rf energy density is created between the engagement planes **325A-325B** of the members **320A-320B** by Rf energy flow directly therebetween. In other words, the engagement planes **325A-325B** of the members at any point in time would have opposing polarities, as provided by the Rf source **150A** and controller **150B**. For purposes of explanation, the

components of the working end and the electrical leads are indicated with positive (+) and negative (-) polarities which correspond to such polarities a particular point in time during energy delivery. In other respects, the energy delivery members **320A-320B** of FIG. 14 are adapted to function as described above to modulate energy application to the targeted tissue **tt** as the thermally sensitive medial layers **340B** of each energy delivery member hovers about its selected switching range. It should be appreciated that the exposed conductive surface portions **340A-340B** can be recessed in the engagement planes **325A-325B**, or partly covered with an insulator elements to prevent the contact (and shorting) between the surfaces if the needle member deflect and inadvertently contact on another.

FIGS. 15A-15B illustrate another embodiment of Type "C" probe **400** in which an elongate length of a single energy delivery member **420** carry at least two spaced apart sections that comprise conductive engagement planes (e.g., **422a-422b**) that are independently coupled to Rf source **150A** and controller **150B** to function with opposing polarities. In this sense, the invention operates somewhat like the bi-polar arrangement of FIG. 14. As can be seen in FIG. 15A, the exemplary probe **400** defines two independent conductive surface engagement portions **422a-422b**, but any number of independent active engagement portions are possible. FIG. 15B illustrates a sectional view of the member **420** with one engagement surface **422a** having a conductive engagement portion **440A** in contact with the medial PTC layer **440B** as described previously. The core conductive electrode portion **440C** is coupled by insulated lead **445** to Rf source **150A** and controller **150B**. The assembly defines a particular polarity at a point in time which, for purposes of explanation is represented by positive (+) and negative (-) polarities in FIG. 15B with the engagement surface portion **440A** coupled by lead **446** to the Rf source **150A**. The second conductive surface engagement portions **422b** has its conductive surface engagement portion **440A'** adjacent to medial PTC layer indicated at **440B'** which in turn is coupled to core conductive portion **440C'**. The core electrode **440C'** is coupled by insulated lead **455** to Rf source **150A** and controller **150B**. The engagement surface portion **440A'** coupled by lead **456** to Rf source **150A** (connection not visible). The portions of the member **420** not comprising an engagement surface are part of an insulative body portion indicated at **464**.

Referring back to FIG. 15A, the effect of using the probe **400** is illustrated wherein lines of an electric field **ef** are indicated in tissue as current flow can be generally directed between the opposing polarities of the spaced apart engagement surfaces. A probe of this type can be used to apply energy to a precise area. A plurality of probes of this